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(11) **EP 1 310 543 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication: 14.05.2003 Bulletin 2003/20

(51) Int Cl.7: **C10G 33/04, B01D 53/26, B01J 19/00**

(21) Application number: **02022859.9**

(22) Date of filing: **14.10.2002**

<p>(84) Designated Contracting States: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR Designated Extension States: AL LT LV MK RO SI</p> <p>(30) Priority: 07.11.2001 DK 200101651</p>	<p>(71) Applicant: Haldor Topsoe A/S 2800 Kgs. Lyngby (DK)</p> <p>(72) Inventor: Hommeltoft, Sven Ivar 3400 Hillerød (DK)</p>
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(54) **Process for the drying of a hydrocarbon stream**

(57) The invention concerns a process for the continuous drying of a hydrocarbon stream and comprises contacting the hydrocarbon stream with an ionic, liquid drying agent of a salt of a fluorinated sulphonic acid.

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triflate in a counter flow contact column 2 at a temperature of 20°C in a continuous operation. The ionic liquid was charged through line 10 at a feed rate of 109 g/h to the top of the column and withdrawn at the bottom. The hydrocarbon stream was charged at a feed rate of 3383 g/h to the bottom of the contact column and withdrawn from the top. The contact column was 0.5m high with an ID=20 mm and packed with 200 ml 4 mm glass helices. [0020] The wetted ionic liquid withdrawn from the contact column 2 was charged to the top of stripping column 6 in which the ionic liquid was dried by stripping in counter flow with a stream 8 of superheated heptane (150°C) before being withdrawn at the bottom of the stripping column and returned to the top of the contact column. The wet ionic liquid was charged to the top at a feed rate of 109 kg/h at ambient temperature and the dried ionic liquid was withdrawn from the bottom of the stripping column and returned to the hydrocarbon contact column.

[0021] Heptane vapour was fed to the stripping column at 1140 g/h. The stripping column was 0,4 m high with ID = 30 mm and filled with 300 ml 4 x 4 mm stainless steel Rashig rings.

[0022] The results are given in Tables 1 and 2 below.

Table 1

Contact Column (Hydrocarbon drying)	
Hydrocarbon flow (feed, g/h)	3383
Ionic liquid flow, (g/h)	109
Before treatment (Wet hydrocarbon feed, ppm water)	80
After treatment (Dry hydrocarbon product, ppm water)	5.5
Hydrocarbon feed temperature (°C)	20
Ionic liquid feed temperature (°C)	20
Hydrocarbon / Ionic liquid rate	31

[0023] The results show that the water content in the hydrocarbon feed is reduced from 80 ppm to 5.5 ppm.

Table 2

Stripping Column (Ionic liquid drying)	
Ionic liquid flow, (g/h)	109
Heptane flow, (g/h)	1140
Before treatment (Wet ionic liquid, ppm water)	2632
After treatment (Dried ionic liquid, ppm water)	198
Ionic liquid feed temperature (°C)	Ambient

Table 2 (continued)

Stripping Column (Ionic liquid drying)	
Heptane feed temperature (°C)	98

Example 2

[0024] This experiment was performed in the same equipment as used for Example 1. However, the flows were changed, as illustrated in Tables 3 and 4 below, to give a hydrocarbon flow/ionic liquid flow ratio of 4 in the contact column. The actual flows are shown in the Tables.

Table 3

Contact Column (Hydrocarbon drying)	
Hydrocarbon flow (feed, g/h)	1609
Ionic liquid flow, (g/h)	409
Before treatment (Wet hydrocarbon feed, ppm water)	76
After treatment (Dry hydrocarbon product, ppm water)	3.5
Hydrocarbon feed temperature (°C)	20
Ionic liquid feed temperature (°C)	20
Hydrocarbon / Ionic liquid rate	4

[0025] The results indicated in Table 3 show that the water content in the hydrocarbon stream was reduced from 76 ppm to 3.5 ppm.

Table 4

Stripping Column (Ionic liquid drying)	
Ionic liquid flow, (g/h)	409
Heptane flow, (g/h)	1140
Before treatment (Wet ionic liquid, ppm water)	217
After treatment (Dry ionic liquid, ppm water)	88
Ionic liquid feed temperature (°C)	Ambient
Heptane feed temperature (°C)	98

Claims

1. Process for the continuous drying of a hydrocarbon stream comprising contacting the hydrocarbon stream with an ionic, liquid drying agent of a salt of a fluorinated sulphonic acid.

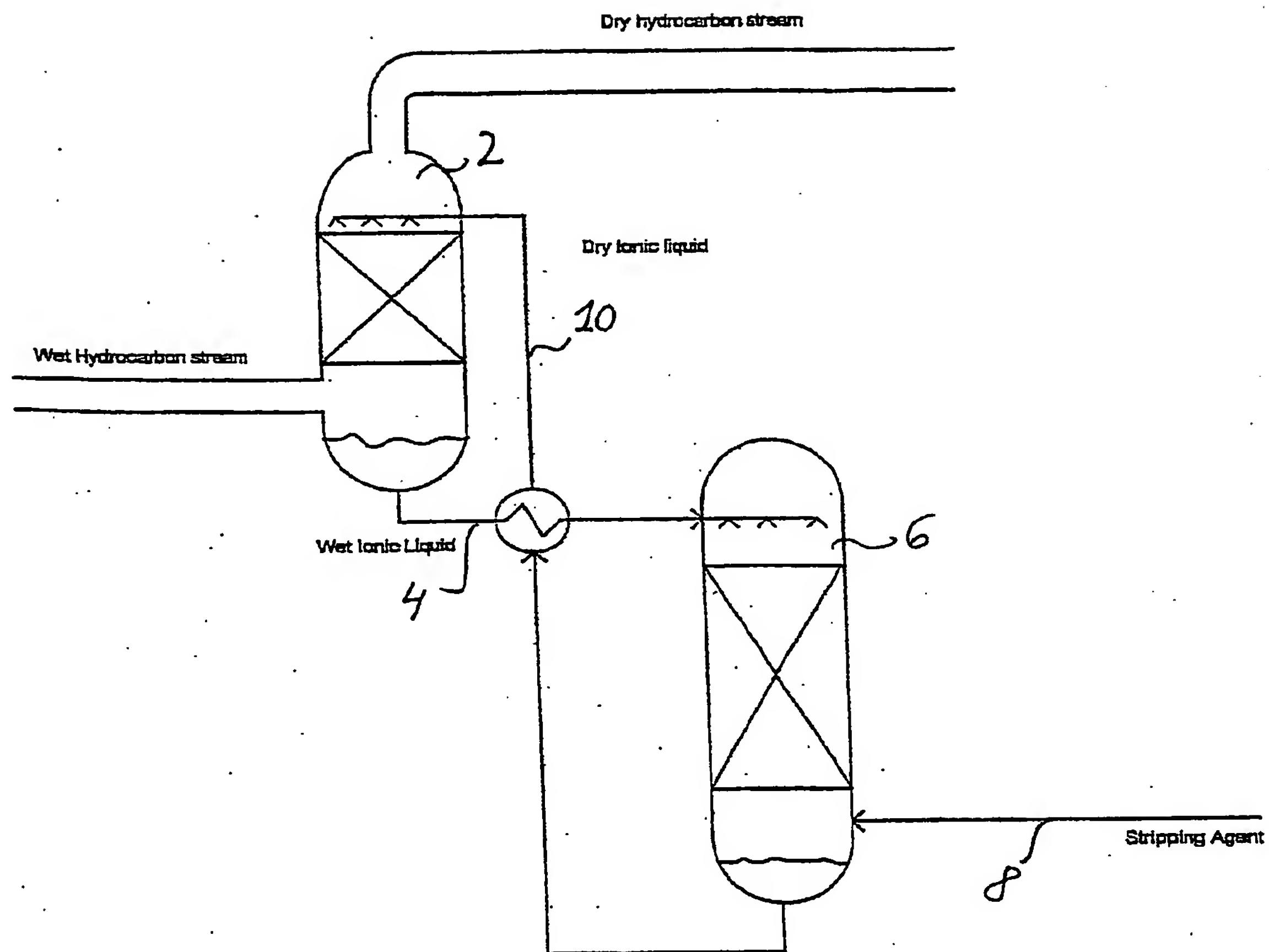


Fig. 1

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 02 02 2859

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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